Recommendations from Plenary Sessions and Working Group Splinter Meetings

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Infrastructure Committee

- See extra slides

Data Center Working Group

- The DCs recommend to continue the efforts by the Infrastructure Committee and the RINEX WG to agree on new file names.
- Until the RINEX version 3 file-name convention is finalized, separate directories for distinguishing between files created from streams and by receivers will be established by all DCs.
- All DCs explore transition options for follow on compression scheme to replace UNIX “compress” as early as possible.

Real-Time Working Group

- Identify a core set of stations for use by all RTAC's in the generation of real-time clocks.
  Responsible: RTACC and RTAC's; Timeframe – start process immediately
- Monitor the stability of the core set of stations on a daily basis
  Responsible – TBD – will be discussed further within the pilot project; Timeframe – ASAP with recognition it is needed before launch of the Real-Time Service
- Analysis Centre Coordinator work towards more frequent updates to the IGU product. Ideally the current cycle of six hours would become one hour.
  Responsible – ACC with cooperation from ACs.
  Timeframe – TBD

GNSS Working Group (1)

- Adopt RINEX Format V3.02 (including QZSS) as soon as possible. Responsible: RINEX WG; Time Frame: 3 months?
- Establish an open source software for RTCM-MSM to RINEX V3.0x conversion. Responsible: IGS community; Time Frame: 6 months
- Encourage the setup of further MGEX tracking sites with focus on global distribution and tracking of the complete suite of available signals. Zero-baseline testbeds are very welcome to study receiver dependent calibration biases. Responsible: GNSS WG, IGS community; Time Frame: 6 months

GNSS Working Group (2)

- Encourage analysis of the collected MGEX data to establish initial orbit and clock test data sets. Responsible: GNSS WG, IGS ACs; Time Frame: 6 months
- Immediate efforts to harmonize the MGEX data archives and to provide an up-to-date and complete picture of the data inventory to the user community. Responsible: GNSS WG, MGEX DC, IGS CB; Time Frame: 1 month

Bias and Calibration Working Group

- Recommendations already covered by other working groups.

Ionosphere Working Group

- RECOM 1 Higher temporal and spatial resolution of IGS combined GIMs - the IAACs (UPC and JPL) agreed on providing their maps in IONEX format, with a resolution of 15 min, 1 degrees and 1 degrees in time, longitude and latitude respectively.
- Starting a new official/operational product – TEC fluctuation changes over North Pole to study the dynamic of oval irregularities (carried out by UWM to be started as official/routine product after performance evaluation period (end of 2012).
- The new the IAAC from GNSS Research Center (GRC), Wuhan University, China (Hongping Zhang, end of 2012).
- Cooperation with IRI COSPAR group

Troposphere Working Group

- Establish automated on-going comparisons of IGS final troposphere estimates (FTEs) with results from other techniques/ACs, with the goal of establishing accuracy of IGS FTEs. Timeframe: next IGS workshop

Antenna Working Group

- NGS robot calibrations are generally accepted for the IGS antenna phase center model. Biases w.r.t. other calibration institutions have to be further investigated.
- Consistent calibration values for multiple GNSS (at least GPS and GLONASS) from a single source are requested for the IGS antenna phase center model. The AWG decides on exceptions (e.g., for antenna types installed at NGA or GSS stations).
- Conventional phase center offset values for the new GNSS are added to igs08.atx.
- GPS satellite antenna phase center variations contained in igs08.atx are extended with estimation results from CODE for nadir angles > 14°.

Clock Product Working Group

- Where possible provide UTC(k) bias offsets of IGS stations collocated at timing laboratories, possibly using pending bias format. This will support utilization of UTC(k) in new v2.0 algorithm.
- Provide updated list of timing important stations to support clock densifications
- Provide v2.0 timescale realignment for other GNSS combined products when available and sufficient clocks are included.

Space Vehicle Orbit Dynamics Working Group

- See recommendations of AC and RF working group
- Repro2 standards agreed:
  - All ACs to implement Earth radiation pressure routines
  - All ACs to implement antenna thrust models
  - All ACs to implement new GPS and GLONASS yaw behaviour models (Dillsner and Weiss)

AC and RF Working Group (1)

Resolve pending reference frame issues

- consider two-step combination planned for repro2
- prepare final IGb08 and update igs08.atx by September
- quantify (if possible) impact of including >24h orbits by Wk 1702

AC and RF Working Group (2)

Continue testing low-degree geopotential terms, with an aim to adopt a “conventional model” (if available) for repro2

- further testing of low-degree geopotential terms from CSR by other ACs
  1. need longer spans of results & further comparisons
- possible adoption for repro2
  1. if preliminary NGS results confirmed, IGS should consider adopting a conventional model for annual geopotential variations for Repro2
  2. must coordinate with GRACE, SLR, & IERS group
  3. Srinivas Bettadpur working on GRACE fit to degree 15

AC and RF Working Group (3)

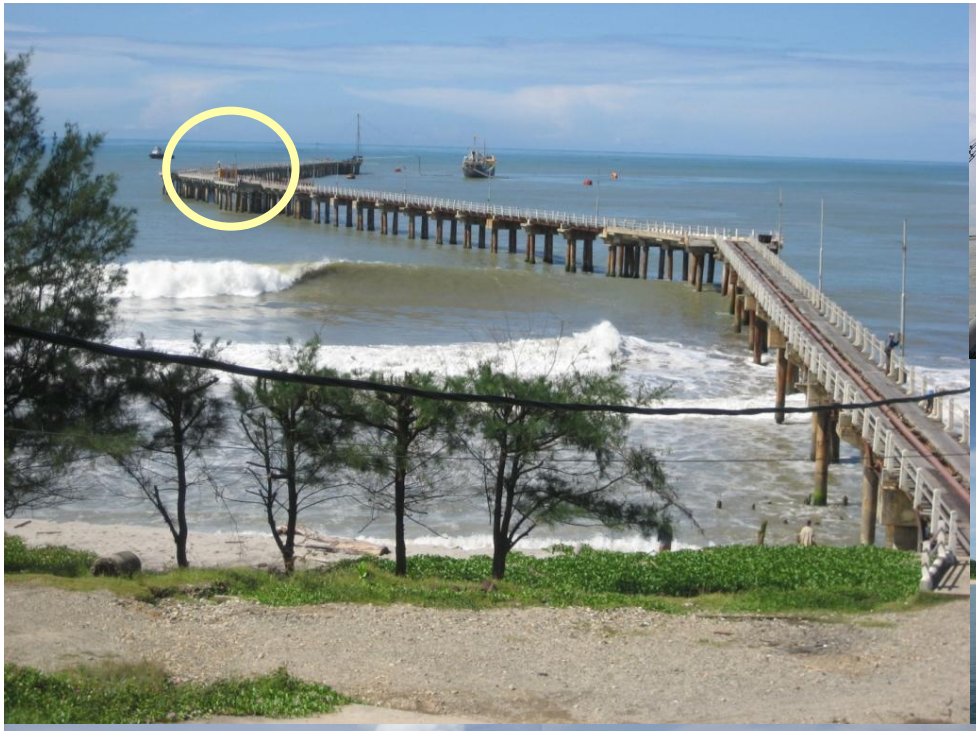
Finalize and implement set of minimum repro2 analysis standards

- all recommended standards available at http://acc.igs.org/reprocess2.html
    1. minimum standards settled (in black)
    2. additional proposed standards for each AC to implement as desire (in red)
- in addition: for all analysis centres, implement and test physical models developed by UCL:
    1. SRP/TRR – using grid files for the bus, and modelling thermal gradients across solar panels using solar and earth radiation fluxes
    2. will update for all GPS & GLO satellite types

IGS TIGA WG

IGS Workshop Olsztyn

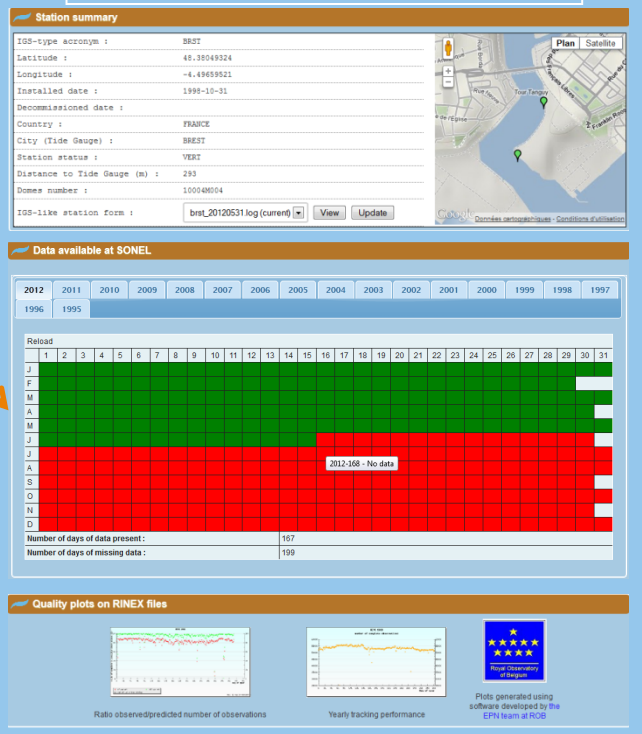
Splinter Meeting 26.07.2012



- Aim of TIGA is to geocentrically reference and monitor the **Tide Gauge Zero** vertical motion
- GNSS at tide gauges is **not (!) (necessarily)** in support of the reference frame, IGS network densification, etc.

TIGA Data Center at SONEL

Details on a GNSS@TG station



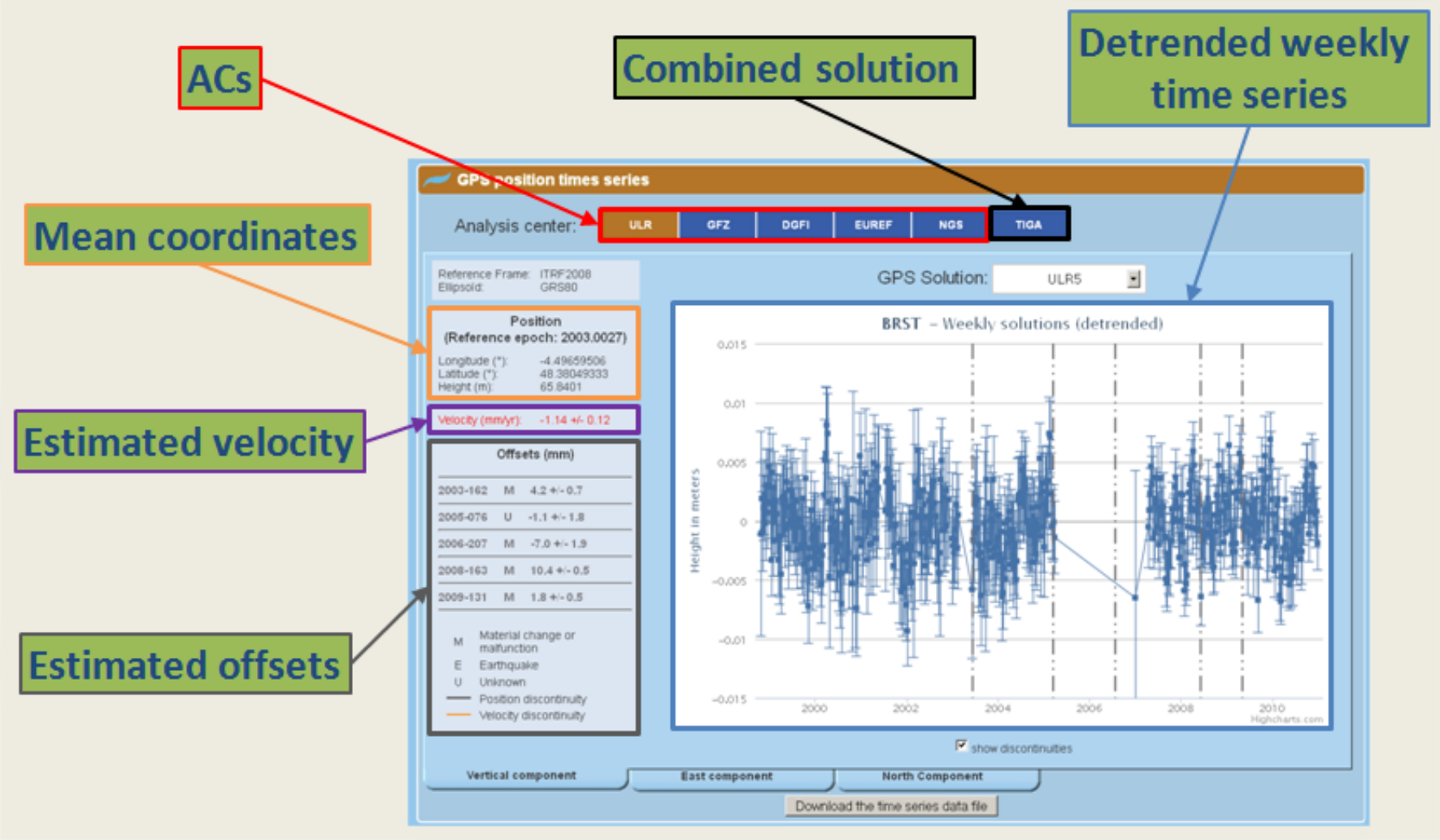
Survey for GNSS@TG sites

Three requirements to become a TIGA station:

i. Availability of GNSS data & sitelog at the TDCs
ii. Tide gauge data being sent to the PSMSL or UHSLC
iii. Provision of the TOS (TIGA Observing Station) form

www.sonel.org

SONEL TIGA DC: Displaying ACs solutions



Example of Brest station: *http://www.sonel.org/spip.php?page=gps&idStation=642*

Recommendations

- IGS should not forget about coordinates
- REPRO2 should asap
- Non-IGS TIGA stations should be handled with care and marked in the final IGS-repro2 solution
- TIGA repro will follow repro2 as close as possible (3 participating centers)
- Interlink IGS repositories of IGS log files with SONEL for TIGA

Discussion and Closing Remarks